
Review

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In This Issue . . .

Broadly defined, agriculture accounts for approximately 20 percent of the nation's GNP. The importance of agriculture is particularly strong in the Eighth Federal Reserve District with its diverse mix of agricultural industries including the production of farm inputs, food processing, agricultural transportation, farm lenders and, of course, farmers. In the first article in this *Review*, Kenneth C. Carraro reviews agricultural trends of 1986 as they affected farmers and farm lenders in the District.

According to Carraro, the District experienced widely varying weather conditions that resulted in record crop yields in some regions but below-average yields in others. One significant agricultural development is the expanding role of the government in direct payments to farmers and reduced farm output. Livestock producers enjoyed higher prices and lower input costs for the year. Agricultural banks reversed a recent trend and posted improved profits and lower levels of delinquent loans. While local Farm Credit System banks showed smaller losses in 1986 than in 1985, farm loan quality continued to deteriorate.

The health of our nation's banking industry has received increased attention during this decade. Deregulation has challenged bank management to run their organizations with greater effectiveness and efficiency. Heavy emphasis on the quality of earnings, margin stability, cost containment and stronger capital positions have created a new playing field for the financial services industry.

In the second article in this *Review*, Lynn M. Barry examines the health and recent performance of commercial banks in the Eighth Federal Reserve District. Her analysis provides useful information on the financial condition, compliance with banking regulations and statutes, and operating soundness of the region's commercial banking industry. Barry concludes that, in general, Eighth District banks outperformed their peers across the nation in 1986. However, while most District institutions are profitable and in good financial condition, agricultural and other credit problems continue to plague some of the region's banks.

In the third article in this issue, Thomas B. Mandelbaum discusses the magnitude and nature of last year's growth in the District's business economy in the context of the current recovery period. After an overview of broad trends of the District economy since 1982, the article highlights differences among the major industrial sectors of the regional economy, the states that dominate the District economy, and the District's four largest metropolitan areas. Projections of economic growth in District states by state universities and agencies provide a view of future trends.

Mandelbaum describes 1986 as a year of moderate growth for the District's economy, the second year of moderate growth following a sharp expansion in 1984. The author found considerable variation, however, in the performance of the District's sectors and states. The analysis shows that Tennessee's recent economic growth leads the District states in most categories, while construction, encouraged by declining interest rates, was the most rapidly growing regional sector in 1986. Projections of the pace of regional growth in 1987 suggested that it will be similar to that of the last two years, making 1987 the fifth successive year of expansion for the Eighth District economy.

The Eighth Federal Reserve District



A Review of the Eighth District's Agricultural Economy in 1986

Kenneth C. Carraro

AGRICULTURE is one of the most important industries in the Eighth Federal Reserve District. The District is home to important food and feed processing businesses in Arkansas and the St. Louis area, as well as the extensive agricultural transportation networks of the Mississippi, Missouri, Ohio, Arkansas and Tennessee-Tombigbee waterways. Ranging from farm-level production through farm inputs and commodity processing up to final consumption, the agricultural sector accounts for more than 20 percent of the nation's gross national product.¹ Because of the high concentration of agriculturally related business, agriculture likely accounts for an even higher percentage of total District output.²

Eighth District agriculture consists of an extremely diverse mix of crops, including such traditionally "southern" crops as tobacco, rice and cotton as well as the Corn Belt crops of soybeans and corn. Livestock production ranges from racehorses in Kentucky and the nation's largest broiler industry in Arkansas to the

traditional hog and cattle operations throughout the entire region. This article provides an overview of District agricultural highlights in 1986.³

CROP HIGHLIGHTS

Production

Since a very high number of farmers participated in government price support programs, which mandate acreage reduction, crop production dropped significantly in the District. The number of crop-acres harvested in the four states that make up the bulk of the District's economy — Arkansas, Kentucky, Missouri and Tennessee — fell from 32.3 million acres in 1985 to 30.8 million acres in 1986, a drop of 4.7 percent. This decline followed a 5.5 percent decline in 1985.

Weather conditions varied widely across the District. Tennessee, Kentucky and Arkansas suffered from particularly dry conditions early and midway through the growing season. This dryness was a by-product of the severe drought that was centered in the Carolinas and Georgia. While late season rains and favorable harvest conditions allowed major crops to recover to

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¹*Economic Report of the President*, p. 148.

²The Eighth Federal Reserve District officially comprises all of Arkansas and parts of Illinois, Indiana, Kentucky, Mississippi, Missouri and Tennessee. In most cases, this article uses data for the entire states of Arkansas, Kentucky, Missouri and Tennessee to represent the District. Due to the availability of comprehensive bank financial data, the entire District is referred to in the section covering agricultural lenders.

³Data for crop and livestock production were derived from the annual reports of the four states' agricultural statistics services. Price data were obtained from the USDA's Agricultural Outlook publication while farm income and assets data are from the USDA's Economic Indicators of the Farm Sector. Sources of farm lender data are footnoted in the appropriate section.

Table 1
Crop Yield Data¹

ARKANSAS				KENTUCKY			
	1986	1985	81 to 85 Average		1986	1985	81 to 85 Average
Cotton	605	767	622	Corn	92	102	90
Rice	5300	5200	4578	Soybeans	32	34	28
Sorghum	62	72	63	Tobacco	2081	2300	2161
Soybeans	21	26.5	23	Wheat	33	34	37
Wheat	41	32	39				

MISSOURI				TENNESSEE			
	1986	1985	81 to 85 Average		1986	1985	81 to 85 Average
Corn	116	110	90	Corn	74	98	83
Cotton	591	653	535	Cotton	573	600	514
Sorghum	81	83	73	Soybeans	25	31	25
Soybeans	33.5	34.5	27	Tobacco	1720	2065	1991
Wheat	33	39	39				

¹Crop yields are generally expressed as a unit of quantity per acre. Soybeans, sorghum, wheat and corn yields are measured in bushels per acre, while rice, cotton and tobacco yields are measured in pounds per acre.

SOURCE: Agricultural Statistics Service in each of the four states.

near their five-year average yields, the lower acreage resulted in overall reduced crop production in the District. Table 1 provides yield data for major crops in the four-state region for 1986, 1985 and the five-year average yields from 1981 to 1985.

In Arkansas, rice and wheat yields surpassed both their 1985 yields and their yield patterns of the past five years. Total rice production increased by .9 percent in 1986. Yields of other major crops in the state, such as soybeans, sorghum and cotton, were below their 1985 levels but near the average yields over the past five years. Total soybean production in the state was 29.3 percent lower in 1986 than in 1985 because of lower yields and smaller acreage.

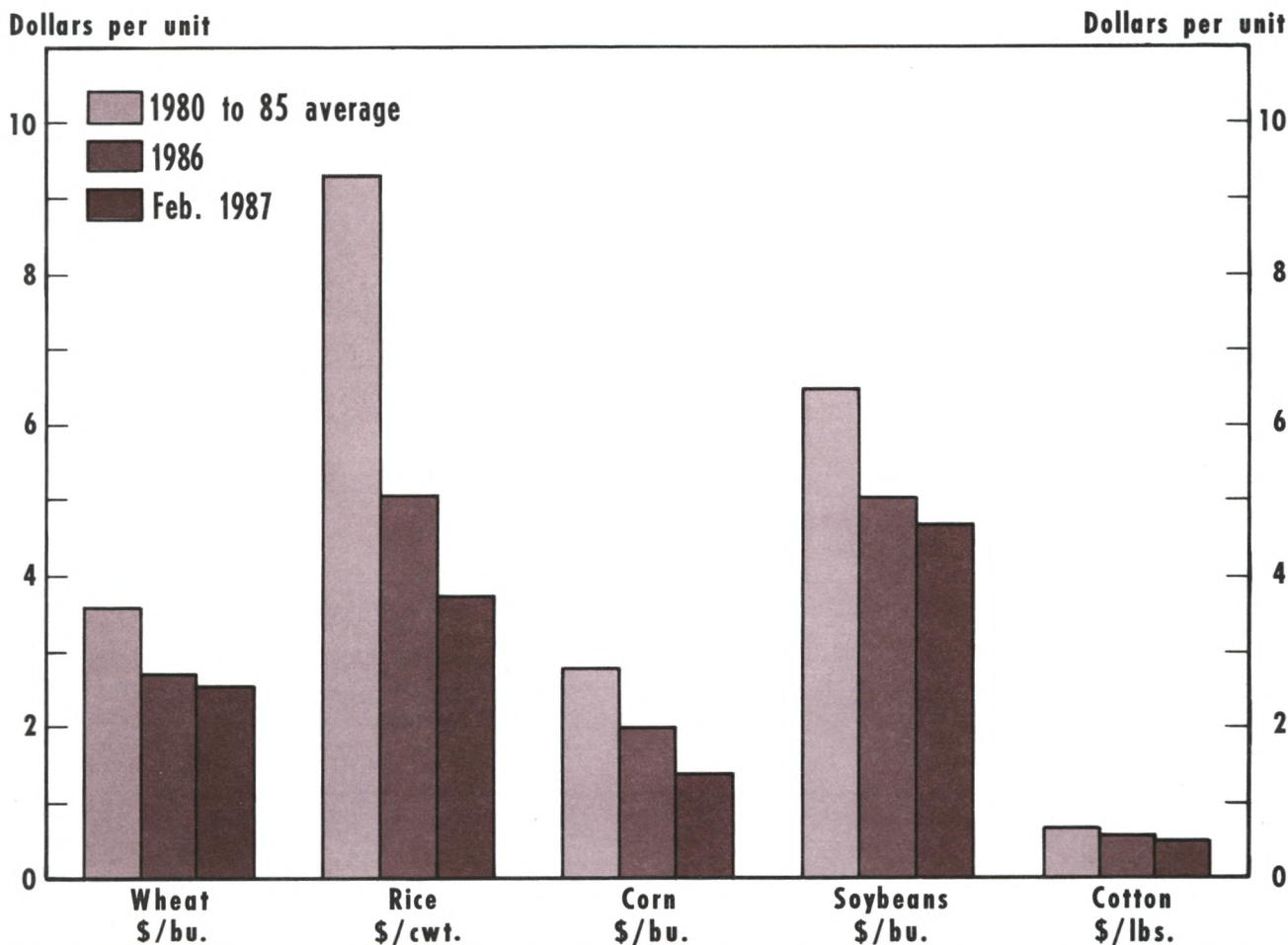
Yields of all major crops in Kentucky were below the yields of 1985 but were near the five-year average yields. Total production of the state's most valuable crop, tobacco, was down 22.7 percent because of production controls and dry weather. The federal price support program for tobacco, which controls its production, was primarily responsible for a 14.6 percent decline in harvested acreage, while dry weather caused below-average yields. Soybean yields, which

benefited most from the late-season favorable weather, were above their five-year average, while most other crops were close to their five-year average.

Of the four states, Tennessee was the most severely affected by the year's dry weather. Yields of all major crops were below their 1985 levels. Cotton yields, however, were above the average of the past five years. The soybean yield was approximately at the longer-term average for the state while corn, tobacco and most other crop yields were below their five-year averages. Soybean production in 1986 was 17.1 percent lower than in 1985, while corn production was 28.2 percent lower than 1985 due to smaller yields and reduced acreage for both crops.

Missouri crop farmers benefited from the most favorable weather in the District. All crop yields in 1986, except for wheat, were above their five-year averages. The 1986 corn yield of 116 bushels per acre was significantly higher than the previous record set in 1985. Total corn production was 2.9 percent higher. Sorghum yields were slightly below their record yields of 1985. Although 200,000 acres of soybeans were lost to late-season flooding, soybean yields were also at near-

Chart 1
Crop Price Comparisons



record levels in the state. Total soybean production was only 1.6 percent smaller in 1986 than 1985.

Prices

Prices of food and feed grains fell sharply, despite the lower average levels of output nationally. Soybean and other oilseed crop prices were also below 1985 levels.

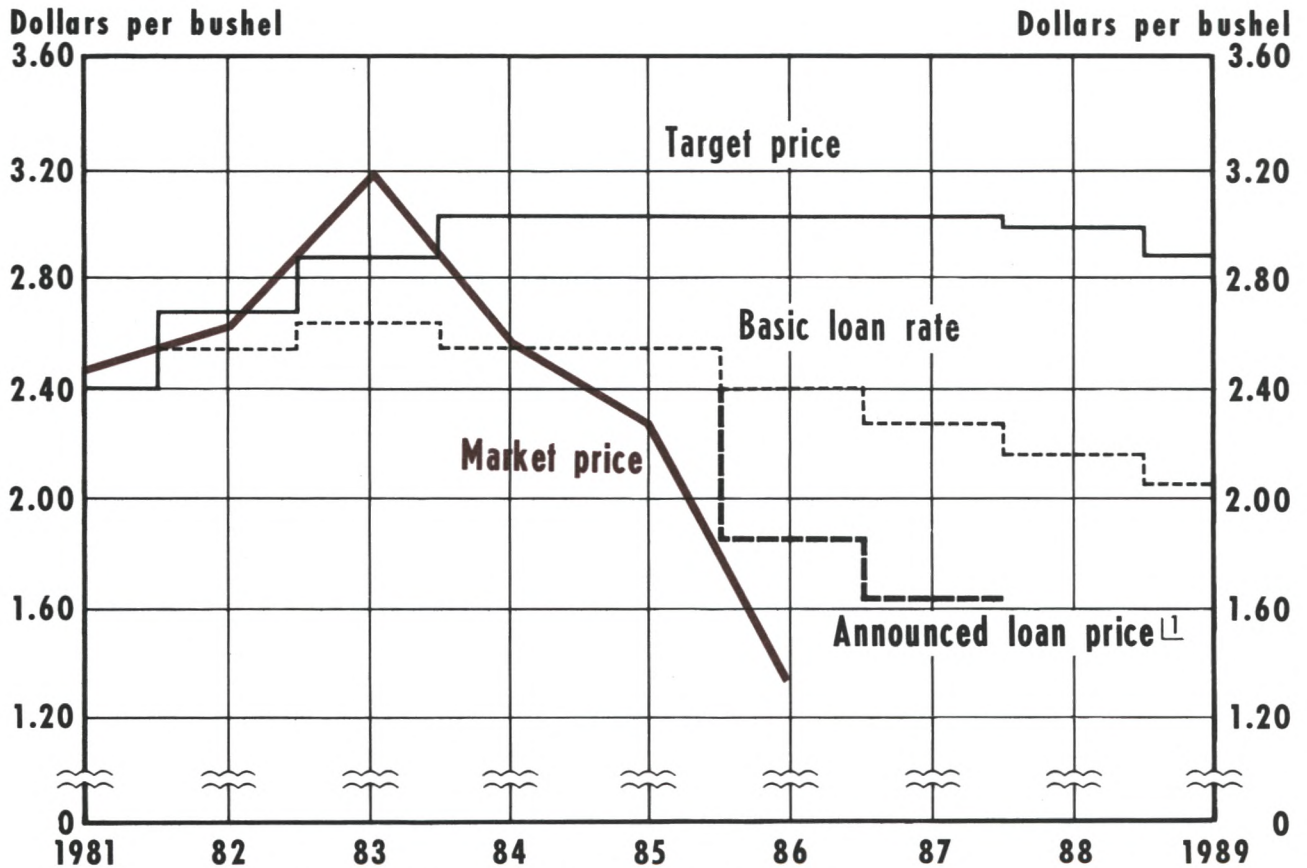
Chart 1, which compares the prices for major crops in the Eighth District, shows that prices in 1986 were below the average prices over the 1980–85 period. Moreover, the most recent crop prices (February 1987) indicate that the pattern of falling prices has continued.

Sharply lower levels of price support loans provided by the discretionary authority of the 1985 Farm Bill were primarily responsible for the crop price declines. The loan levels usually provide a lower bound for commodity prices. Chart 2 shows how the market price for corn has fallen as the loan support price was lowered sharply over the past two years. Food grain prices fell 18.0 percent from 1985 levels; feed grain prices were down 21.3 percent.

For some crops, such as corn and wheat, market prices have declined to levels well below their price support levels. Some analysts have attributed this to the government’s use of generic commodity certificates in lieu of direct cash payments to farmers to reduce stocks of government-owned commodities

Chart 2

Corn: Target Price, Loan Rate and Market Price



⌊ Set by the Secretary of Agriculture within mandated limits.

Source: U.S. Department of Agriculture. See Economic Report of the President 1987, p.154.

(see shaded box on opposite page for more information). The certificates have a stated value and allow the holder to receive commodities stored by the Commodity Credit Corporation (CCC). The commodities then may be sold at prevailing market prices. The release of government stockpiles tends to increase market supply and reduce market prices.

Soybean prices also were below 1985 levels despite lower total production in 1986 primarily because of the large stocks that have been accumulated in the United States. As chart 3 indicates, while soybean stocks held elsewhere in the world remained level over the last eight years, U.S. stocks of soybeans have grown sharply since 1983 when a drought and the

Payment-In-Kind (PIK) program reduced stocks sharply.

LIVESTOCK HIGHLIGHTS

Production

District cattle and calf production, which declined in both 1984 and 1985, bounced back in 1986, increasing by 2.2 percent. Cattle and calf production increased in Arkansas and Kentucky, while declining in both Missouri and Tennessee. District hog production, which also declined in 1984 and 1985, continued its descent, closing at 6.5 percent lower in 1986 than in

Generic Commodity Certificates

In 1983, the United States Department of Agriculture (USDA) authorized the Payment-In-Kind (PIK) program to reduce the mounting surplus of government-owned commodities. Farmers were given surplus commodities in exchange for large reductions in crop acreage. Farmers then were free to use the grain as feed or sell it at the prevailing market price. The 1985 Farm Act makes similar provisions for government-owned commodities to be used in partial payment of price supports. Under the provisions of the Farm Act, the USDA issues certificates for a stated dollar value that can be exchanged for government owned commodities.

The certificates can be redeemed for any of the numerous commodities that the government has acquired through the Commodity Credit Corporation, therefore the name "generic certificates." Certificate holders are able to sell the certificates. In

fact, the certificates have become somewhat of a commodity of their own right. The Merchants' Exchange of St. Louis, for example, has created a market for the certificates. At one point in 1986, certificates sold at a premium of 30 percent over their face value.

One important effect of the certificates has been to increase the supply of commodities and reduce market prices. This has occurred because commodities that otherwise would not be available to the market under the provisions of the government storage programs, are being redeemed by certificate holders and sold on the market. The mechanics of the generic certificate program have given farmers a *de facto* marketing loan price support, which allows them to receive a supported price for their commodities and then sell them at world market prices.

Chart 3

Soybean Carryover Stocks

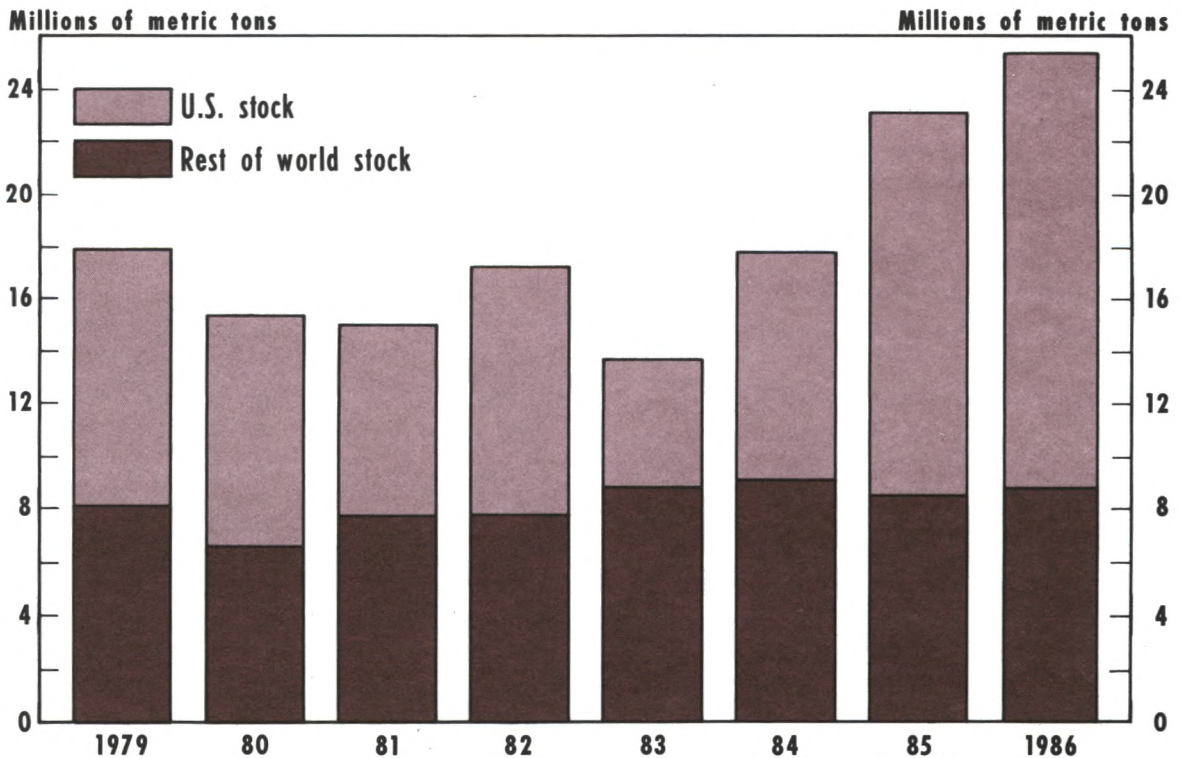
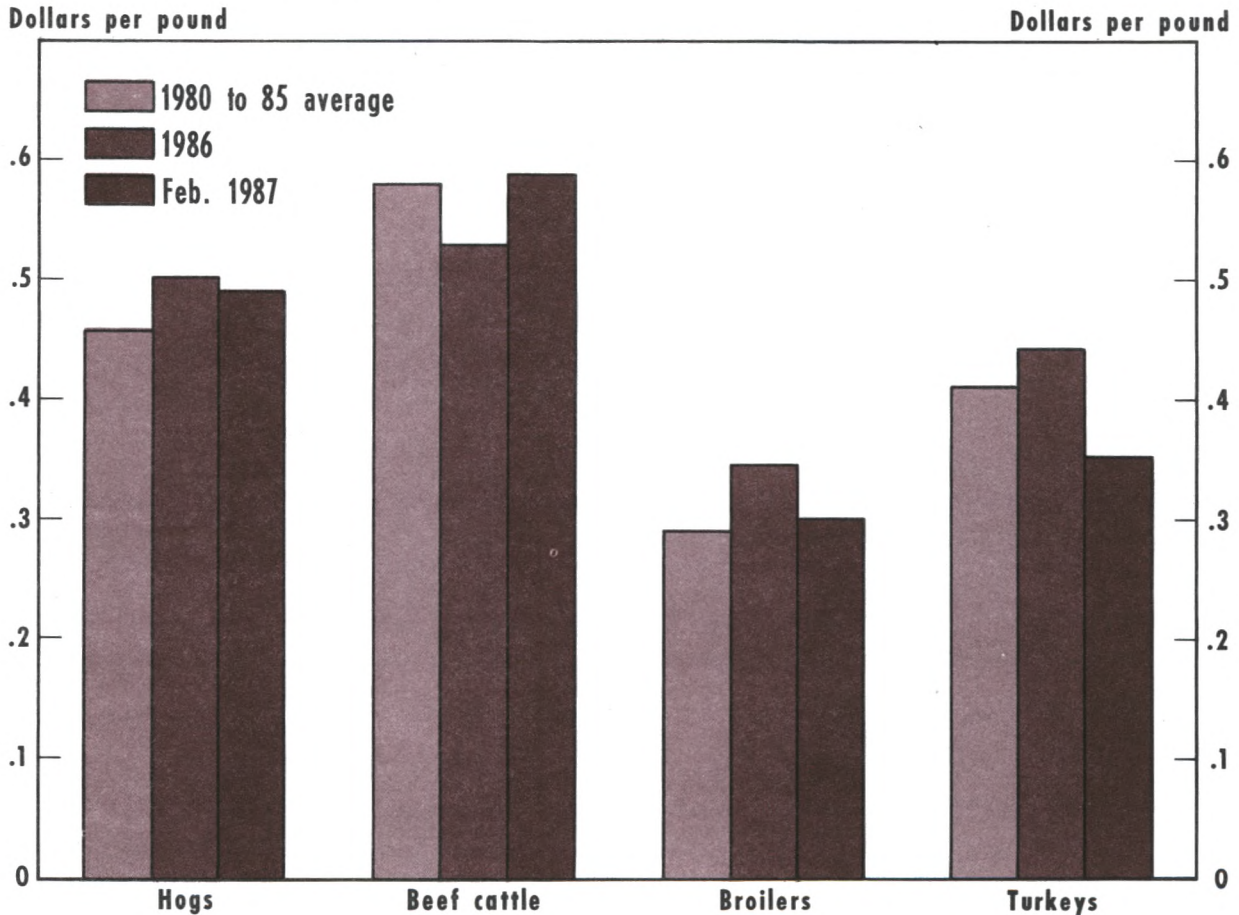


Chart 4
Livestock Price Comparisons



1985. Missouri, the most important hog-producing state in the District, showed a decline of 10.9 percent from 1,234 million pounds in 1985 to 1,099 million pounds in 1986.

Poultry production continued to grow, especially in Arkansas, the nation's leading producer of broilers. Broiler production accounts for over 25 percent of all farm cash receipts in Arkansas. Turkey production in Missouri also has exhibited strong growth over the past two years.

Prices

Livestock prices remained below 1985 levels through the first half of 1986, but price hikes during the second half boosted the price index of meat animals up 2.1 percent in 1986. As chart 4 shows, over a

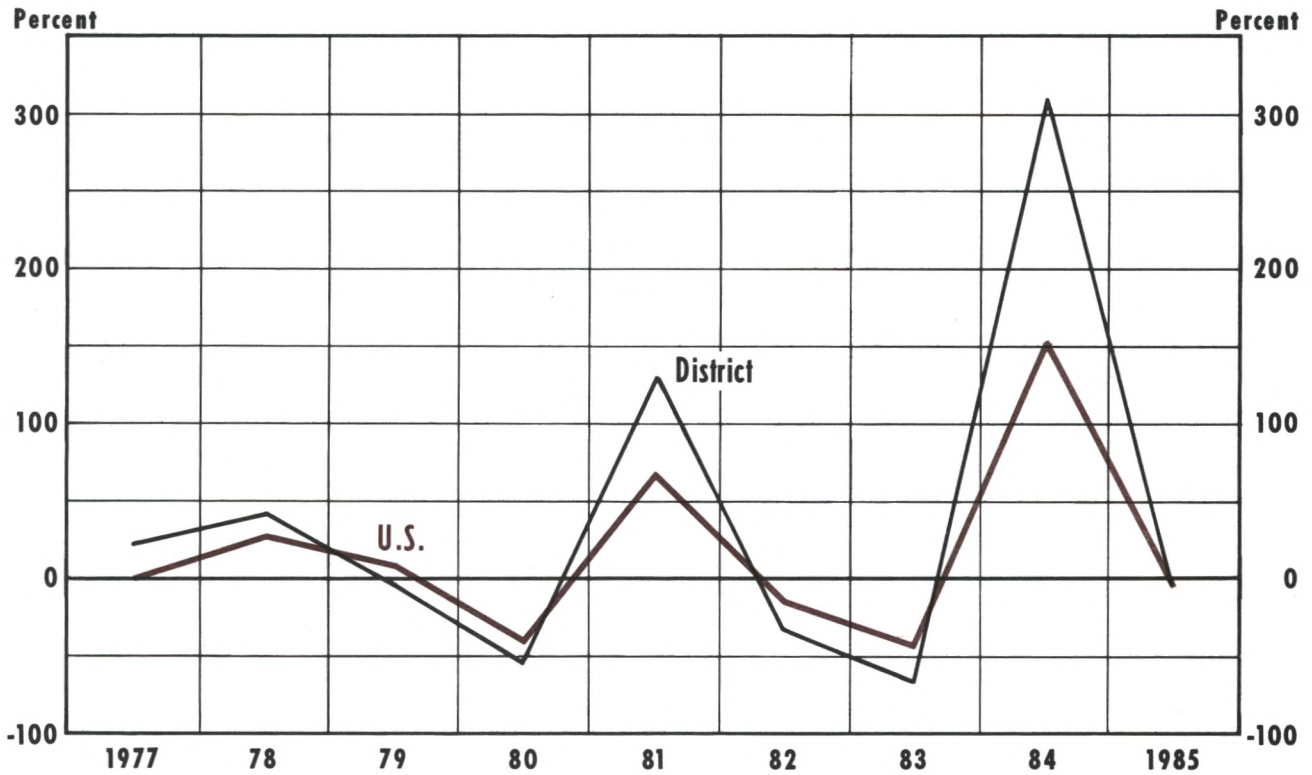
longer-term perspective, all major livestock groups except beef cattle registered prices in 1986 that were higher than the average price over the 1980-85 period. In addition, both beef cattle and hog prices in early 1987 have remained near or above their 1986 average levels.

FARM FINANCES

Nationally, total net farm income has been estimated at \$33 billion to \$37 billion in 1986, up from \$30.5 billion in 1985. Sharply lower production costs are responsible for the increase. Net farm income is forecast at the same level for 1987. Chart 5 shows the relationship between the growth of District net farm income and national net farm income growth from 1977 to 1985. Although 1986 net farm income data for

Chart 5

Net Farm Income Growth



individual states will not be available until this fall, the close relationship between changes in national and District farm income suggests that District net farm income also rose in 1986 and will be unchanged in 1987.⁴

Government payments accounted for a growing share of farm income both nationally and District-wide. Nationally, government payments of \$12 billion represented approximately 34 percent of total net farm income in 1986; they are expected to grow to \$16 billion this year, almost half of projected net farm income.

In 1985, farmers in the four-state District region received payments of \$626 million. This figure repre-

sented 20.1 percent of net farm income for the year. Government payments to District farmers were undoubtedly even larger in 1986, for several reasons. First, price support loan levels were lowered, while target prices were unchanged. The wider gap between target and support prices caused a larger proportion of crop payments received by farmers to come from direct government payments. Second, under a marketing loan program for rice and cotton, which are major crops in Arkansas, Missouri and Tennessee, farmers repaid their price support loans at the lower world commodity price rather than at the higher price they received for the original crop loan. This, of course, implicitly allowed farmers to keep a portion of their original CCC loan as a direct support payment.

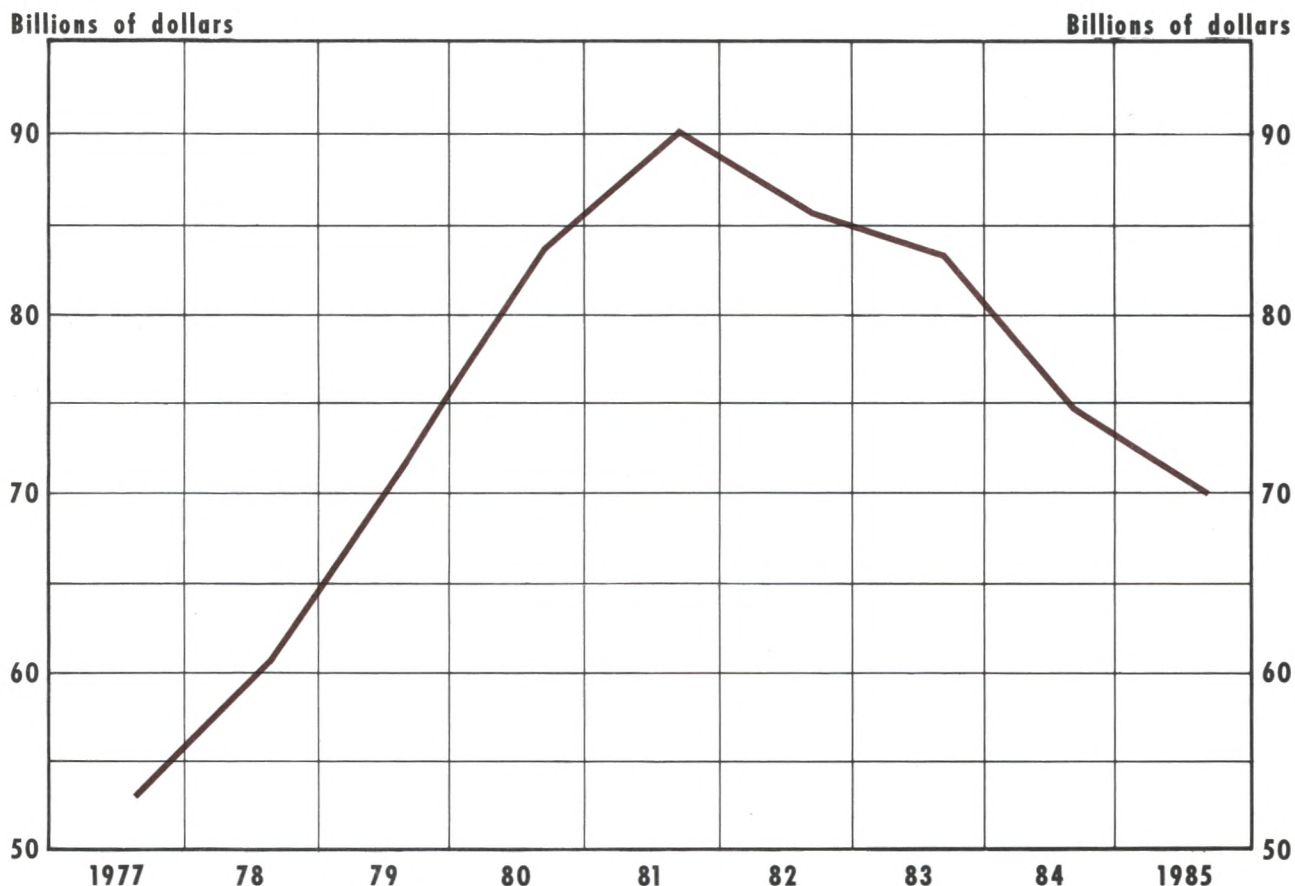
Meanwhile, farm production expenses dropped for the second consecutive year in 1986. Lower levels of farm debt, lower interest rates on such debt and reduced expenses for production inputs contributed to the reduction. The chief areas of input price declines

⁴When net farm income data are adjusted for inflation, it becomes apparent that farm income has been declining since World War II, with the exception of the early 1970s. See Belongia (1986) for a detailed examination of the long-term decline in the farm sector.

Chart 6

Total Farm Assets

Arkansas, Kentucky, Missouri and Tennessee



were petroleum (used for fuel, fertilizers and chemicals) and feed grains (used for animal feed).

As chart 6 shows, the value of total farm assets in the four-state region of the District has been declining steadily since 1981. In 1986, land values in the District continued to decline in Arkansas, Kentucky and Missouri, but increased in Tennessee. Table 2 indicates that, of the four-state region, Arkansas experienced the largest land value decline in 1986, while Missouri had the largest decline since the 1981-82 peak.

FARM LENDERS

The overall volume of farm loans outstanding in the District continued to decline in 1986. This secular

decline is associated with lower input costs, falling land values, increased government payments, and the weakened financial position of many farm borrowers.

The two most important sources of credit for farmers in the District are agricultural banks and the Farm Credit System (FCS).⁵ The volume of farm loans outstanding at District agricultural banks increased by

⁵Agricultural banks are considered to be commercial banks with above-average percentages of farm loans. At the end of 1986, agricultural banks were those with more than 16 percent of their total loans in farm loans. All bank data are derived from banks' end-of-year Reports of Conditions and Income, which FDIC-insured banks must file. The FCS has offices in St. Louis and in Louisville. The St. Louis District covers the entire states of Arkansas, Illinois and Missouri. The Louisville District includes Indiana, Kentucky, Ohio and Tennessee.

Table 2
District Farmland Values

	February 1987 (\$/acre)	Change from February 1986	Change from peak value ¹
Arkansas	\$ 634	-10.1%	-42.2%
Kentucky	791	- 9.1	-25.2
Missouri	552	- 8.9	-44.2
Tennessee	1,012	+ 2.0	- 5.4

¹Land values peaked in Arkansas and Kentucky in 1982 and peaked in Missouri and Tennessee in 1981.

SOURCE: Agricultural Statistics Service in each of the four states.

.9 percent from 1985 but was 6.1 percent lower than in 1984. The slight increase at agricultural banks in 1986 can be attributed to the 13.1 percent growth in farm loans secured by farm real estate.⁶

Total farm loans outstanding at the two FCS Districts fell by 19.4 percent from 1985 and by 34.3 percent from 1984, a much steeper drop than for most other farm lenders. These declines in the share of farm debt held by Farm Credit System lenders may be influenced by factors such as the higher interest rates charged by FCS lenders relative to commercial banks or concern on the part of FCS borrowers over the possible loss of value of borrower stock.

According to preliminary data, the financial condition of agricultural banks in the District has begun to improve. The delinquency rate on all loans at District agricultural banks fell from 6.4 percent at the end of 1985 to 5.8 percent at the end of 1986. The delinquency rate on agricultural loans fell from 6.6 percent of total farm loans outstanding at the end of 1985 to 5.4 percent at the end of 1986.⁷ The proportions of total loans and agricultural loans charged off at agricultural

banks, while up sharply in 1985, declined slightly in 1986.

An additional indication of this improvement can be found in the number of agricultural banks at which the volume of past-due and nonaccrual loans exceeds bank capital and loss reserves. Most banks that failed in 1986 reported past-due and nonaccrual loans in excess of the bank's capital and reserves. The number of agricultural banks in this position, which had been steadily increasing for a number of years, peaked in 1985; by the end of that year, 17 agricultural banks in the District were in this condition. Only 11 such District agricultural banks fell into this category in 1986. Moreover, only three District agricultural banks failed last year.

Profitability at District agricultural banks, as measured by banks' return on assets and return on equity, improved in 1986 after stabilizing in 1985. Prior to 1981, agricultural banks generally had enjoyed significantly stronger earnings than similar-sized nonagricultural banks. Since 1981, however, the earnings gap between these kinds of banks first narrowed and then was eliminated because of rising loan losses and provisions to cover these loan losses at agricultural banks. Chart 7 plots the profitability of nonagricultural banks and similar-sized agricultural banks.⁸

While agricultural banks have shown some improvement, problems at the two Farm Credit Districts in the area have continued to worsen. The rate of nonaccrual and restructured loans at the two FCS Districts combined rose from 9.3 percent of all loans at the end of 1985 to 14.3 percent at the end of 1986.⁹ The combined rate of loans charged off at the two Districts rose from 1.8 percent to 2.5 over the same period.

⁸This comparison was made by first calculating the average size and standard deviation for agricultural banks. Banks were restricted to those smaller than the average agricultural bank size plus one-half standard deviation. For 1986, this size limit was \$57.9 million in total bank assets. Nonagricultural banks include banks with an agricultural loan to total loan ratio of less than 5 percent.

⁹This rate is not strictly comparable to the delinquency rate for commercial banks. It is calculated as the sum of nonaccrual and restructured loans over total loans outstanding for the Federal Land Banks, the Federal Intermediate Credit Banks and the Banks for Cooperatives. In all cases, the amount of restructured loans are extremely small relative to the nonaccrual loans. These data are derived from the annual reports of the St. Louis and Louisville FCS Districts. When more complete data from the Farm Credit Administration's Summary Report of Conditions and Performance are used, the rate of nonperforming loans rose from 13.5 percent on September 30, 1985, to 24.6 percent one year later. Nonperforming loans include nonaccrual and restructured loans plus "other high-risk loans."

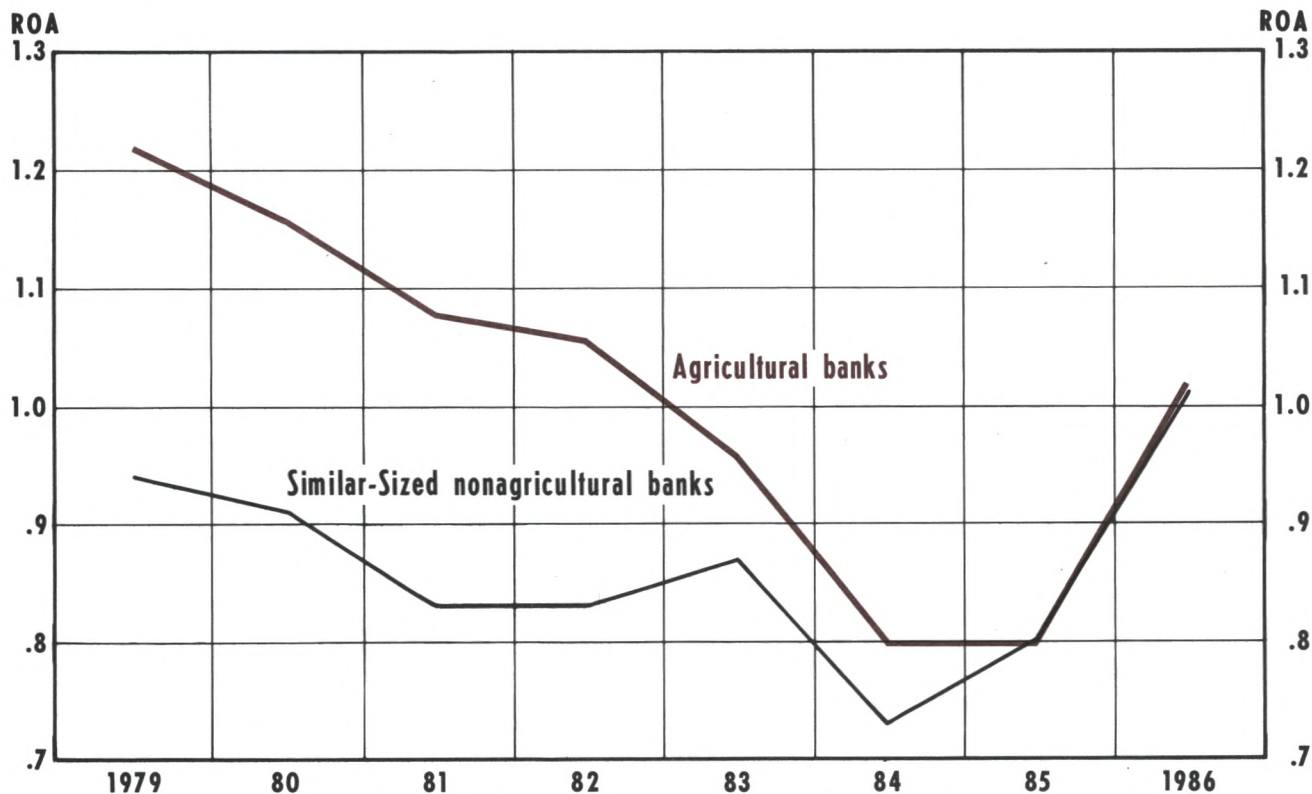
⁶Melichar (1987) cites a Federal Reserve survey indicating that most of the new farm loans secured by real estate have short maturities and are for farm operating or other non-real-estate purposes. This suggests that bankers may be demanding farmland as collateral for operating and machinery loans.

⁷The delinquency rate includes loans that are 30 days or more past-due as well as nonaccrual loans. The agricultural loan delinquency rate is calculated as delinquent agricultural loans over the sum of farm non-real-estate loans and farm real-estate loans outstanding. The delinquency rates on all loans and agricultural loans declined at agricultural banks in each of the District states except Mississippi where both rates increased slightly.

Chart 7

District Bank Profitability

Return on Assets



Although loan chargeoffs increased in the District, total net income improved at the local FCS lenders. Losses at the Farm Credit Banks of St. Louis were \$121 million in 1986, down from \$254 million in 1985. Losses at the Farm Credit Banks of Louisville fell from \$294 million to \$101 million over the same period. Nationally, losses at the Farm Credit System were \$1.9 billion for all of 1986, down from the \$2.7 billion loss in 1985.

While losses have decreased both nationally and locally, the capital of the Federal Land Banks in both St. Louis and Louisville has been reduced to the point that their stock, which borrowers must purchase to obtain a loan, has become impaired. This means that, under generally accepted accounting principles, the stock's book value is less than the \$5 full par value. Currently, the stock is being redeemed at full par value thanks to the use of regulatory accounting principles that were permitted under the Farm Credit Act Amendments passed by Congress in 1986.

Both the St. Louis and Louisville Farm Credit Banks called upon the loss-sharing provisions of the Farm Credit System to receive financial assistance from other entities of the System in 1986. The Federal Land Bank of Louisville received \$140 million (net) from other institutions, while the Louisville Federal Intermediate Credit Bank and Bank for Cooperatives were net contributors of financial assistance under the System's Bank Capital Preservation Agreement. The Federal Land Bank of St. Louis received \$15.6 million in financial assistance but contributed \$18.4 million to other institutions. The other two St. Louis FCS banks were net contributors as well.

SUMMARY

District agricultural conditions in 1986 exhibited a large degree of variability due to weather conditions. While record yields of some major crops occurred in

Missouri, Tennessee yields were below average due to dry weather. In general, however, District-wide yields were near their five-year trend levels.

Government farm policy had a major effect on agriculture. In part because of government price support programs that require acreage reductions, harvested acreage fell by 4.7 percent in 1986 after falling 5.5 percent in 1985. Despite the reduced acreage, crop surpluses continued to mount causing crop prices to fall. Falling crop prices in turn led to high levels of direct government price support payments. Such payments to District farmers were particularly high for cotton and rice, the two crops supported by the government's marketing loan program.

While crop producers were faced with falling market prices, livestock producers experienced steady or rising prices and increasing profits due to lower feed costs.

As was true for the nation, District net farm income is predicted to increase from 1985. Farm debt continued to decrease in 1986 as a result of lower production levels and lower input costs. Despite the lower debt levels, farmers' debt-to-asset ratios have deteriorated because of falling asset values.

During 1986, agricultural banks generally reversed a five-year pattern of declining profitability and rising delinquency rates. While the Farm Credit System had smaller losses in 1986 than in 1985, loan delinquency rates rose sharply and the two local Farm Credit System Districts required financial assistance from other Districts.

REFERENCES

- Belongia, Michael T. "The Farm Sector in the 1980s: Sudden Collapse or Steady Downturn?" this *Review* (November 1986), pp. 17-25.
- Economic Report of the President 1987*. (U.S. Government Printing Office, 1987).
- Farm Credit Administration. "Summary Report of Condition and Performance of the Farm Credit System," Quarter Ending September 30, 1985 and 1986.
- Melichar, Emanuel. "Farm Credit Developments and the Financial Condition of Agricultural Banks" a preliminary report for the National Agricultural Credit Committee (Board of Governors of the Federal Reserve System, March 16, 1987).
- U.S. Department of Agriculture. Economic Research Service, *Agricultural Outlook*, various dates.
- _____. Economic Research Service, *Economic Indicators of the Farm Sector*, various dates.

A Review of the Eighth District's Banking Economy in 1986

Lynn M. Barry

During a year of continuing economic expansion, banks in the Eighth Federal Reserve District showed moderate earnings improvement in 1986.¹ Reported earnings rose at many District banks: profitable investment decisions and lower interest rates, which reduced the cost of deposit liabilities, more than offset loan losses. Though most institutions are profitable and in good financial condition, agricultural and other credit problems continue to trouble some District banks.

Bank failures, while up sharply nationwide, declined in the Eighth District. Nationally, 138 banks insured by the Federal Deposit Insurance Corporation (FDIC) failed in 1986, the largest number to fail since the FDIC was formed in 1933. Five banks in the District failed in 1986 compared with six in 1985 — one national bank and four state banks not members of the Federal Reserve System.² These five banks represent less than 1 percent of the total number of banks in the District and had combined total assets of \$72.7 million, only 0.2 percent of all District bank assets.³

This article examines the overall condition of Eighth District banks by assessing several measures of bank

performance, including earnings, asset quality and capital adequacy. An evaluation of these measures provides useful information on the financial condition, compliance with banking regulations and statutes, and operating soundness of the regional banking industry.

EARNINGS

The number of District banks with negative earnings fell last year from 127 banks in 1985 to 113 (or from 9.2 percent to 8.5 percent of District banks) in 1986. A notable improvement occurred in the smallest bank category (less than \$25 million in assets), in which the number of banks with negative net income declined by seven.

Two key measures of bank earnings and managerial performance are the return on assets (ROA) ratio and the return on equity (ROE) ratio. The ROA ratio, calculated by dividing a bank's net income after taxes by its average assets, gauges how well a bank's management is employing its assets. The ROE ratio, obtained by dividing a bank's net income by its equity capital, indicates the return on the shareholders' investment.⁴

District banks generally had higher returns on assets and equity in 1986 than in the previous two years. As table 1 indicates, Eighth District banks earned an average 0.90 percent ROA and an 11.53 percent ROE in 1986, both up from their 1985 performance. The 1986 figures for District banks compare favorably with the national average ROA of 0.64 percent and ROE of 9.83 percent.

Lynn M. Barry is an economist at the Federal Reserve Bank of St. Louis. Rosemarie Mueller provided research assistance.

¹The Eighth Federal Reserve District consists of the following states and parts of states:

Arkansas, entire state; Illinois, southern 44 counties; Indiana, southern 24 counties; Kentucky, western 64 counties; Mississippi, northern 39 counties; Missouri, eastern and southern 71 counties and the City of St. Louis; Tennessee, western 21 counties.

²Of the five District commercial bank failures in 1986, three were agricultural banks (banks with more than 25 percent of their total loans to farm borrowers).

³See Carraro (1986/1987).

⁴Equity capital includes common and perpetual preferred stock, surplus, undivided profits and capital reserves.

Table 1
Return on Average Assets and Return on Equity

	12/1986	12/1985	12/1984
Return on Average Assets			
United States	0.64%	0.69%	0.64%
Eighth District	0.90	0.84	0.84
< 25 million in assets	0.76	0.70	0.68
25-50	0.85	0.80	0.81
50-100	0.95	0.96	0.92
100-300	0.90	0.97	0.96
300 million-1 billion	0.74	0.54 ¹	0.90
> 1 billion	0.98	0.87	0.72
Return on Equity			
United States	9.83%	10.67%	10.06%
Eighth District	11.53	10.88	10.93
< 25 million in assets	8.06	7.63	7.37
25-50	9.80	9.29	9.36
50-100	11.18	11.45	11.30
100-300	11.35	12.49	12.17
300 million-1 billion	9.79	7.08 ¹	12.18
> 1 billion	14.59	13.47	11.55

¹Reflects substantial loan losses that occurred when a now-defunct government securities group was unable to honor the obligations of a large commercial bank in Arkansas.

SOURCE: Federal Deposit Insurance Corporation, "Consolidated Reports of Condition and Income for Insured Commercial Banks," 1984-86.

Increased profitability at District banks arose primarily from both wider net interest margins and improved asset quality (which resulted in fewer charge-offs). Net interest margin, roughly similar to a business' sales margin, measures the spread between a bank's interest income and interest expense. The decline in interest rates during 1986 reduced debt-servicing costs and increased the lending spread compared with the previous two years. As table 2 shows, the average spread between interest income and expense as a percent of average assets is 4.05 percent in the District, compared with 3.77 percent in the nation.

Bank earnings in the District were boosted during the past year as the largest banks continued to expand their noninterest sources of income by pricing more of their products explicitly. Major income sources included fee income associated with deposit, trust and mortgage services. Smaller banks, however, have had much slower growth of noninterest income. As table 3

Table 2
Net Interest Income as a Percent of Average Assets¹

	12/1986	12/1985	12/1984
United States	3.77%	3.76%	3.69%
Eighth District	4.05	3.92	3.95
< 25 million in assets	4.31	4.18	4.23
25-50	4.19	3.88	4.10
50-100	4.24	3.85	4.07
100-300	4.13	4.18	4.10
300 million-1 billion	4.11	4.20	4.00
> 1 billion	3.74	3.56	3.49

¹Interest income has been adjusted upward for the taxable equivalence on tax-exempt state and local securities.

SOURCE: Federal Deposit Insurance Corporation, "Consolidated Reports of Condition and Income for Insured Commercial Banks," 1984-86.

Table 3
Noninterest Income as a Percent of Average Assets

	12/1986	12/1985	12/1984
United States	1.27%	1.18%	1.08%
Eighth District	1.01	0.94	0.92
< 25 million in assets	0.55	0.55	0.58
25-50	0.52	0.52	0.51
50-100	0.52	0.53	0.53
100-300	0.72	0.74	0.68
300 million-1 billion	1.25	1.14	1.10
> 1 billion	1.69	1.63	1.74

SOURCE: Federal Deposit Insurance Corporation, "Consolidated Reports of Condition and Income for Insured Commercial Banks," 1984-86.

indicates, noninterest income relative to average assets has remained essentially unchanged at District banks with assets less than \$100 million.

ASSET QUALITY

Asset quality is a primary factor influencing the banking industry's earnings pattern. Concern among regulators about the quality of bank assets has increased in recent years, given its direct effect on bank profitability.

Table 4
Net Loan Losses as a Percent of Total Loans¹

	12/1986	12/1985	12/1984
United States	0.93%	0.81%	0.72%
Eighth District	0.86	0.89	0.60
< 25 million in assets	1.24	1.51	1.15
25-50	1.16	1.38	0.92
50-100	1.03	1.09	0.69
100-300	0.95	0.72	0.47
300 million-1 billion	0.88	0.78	0.53
> 1 billion	0.57	0.59	0.39

¹Total loans and leases charged-off due to uncollectibility, less amounts recovered on previous charge-offs.

SOURCE: Federal Deposit Insurance Corporation, "Consolidated Reports of Condition and Income for Insured Commercial Banks," 1984-86.

Changes in asset quality typically are monitored by two indicators. The ratio of net charge-offs to total loans is a traditional measure of loan quality, showing the percentage of net loans (adjusted for recoveries) actually written off as losses.

The second measure of asset quality, the nonperforming loan rate, indicates the level of problem loans as well as the potential for future loan losses. Problem assets include the following components: loans greater than 89 days past due, nonaccrual loans and renegotiated loans.

Since year-end 1982, all FDIC-insured commercial banks have reported delinquencies (loans more than 30 days past due), nonaccrual and renegotiated loans, and loan charge-offs on a quarterly basis. Nonaccrual loans are those with scheduled payments due and unpaid for more than 90 days, for which full payment of interest or principal is unlikely. Nonaccrual loans may also include loans that the bank decides to classify as nonaccrual (that is, the recent decisions by major banks with respect to Brazilian loans). Renegotiated loans are loans that have been restructured to provide a reduction of either interest or principal because of a deterioration in the borrower's financial position. The information now reported permits a comprehensive analysis of the degree and breadth of a bank's loan quality problems.

As table 4 indicates, the ratio of net loan losses to

Table 5
Nonperforming Loans as a Percent of Total Loans

	12/1986	12/1985	12/1984
United States	2.77%	2.83%	3.05%
Eighth District	2.16	2.50	2.50
< 25 million in assets	2.68	3.26	3.03
25-50	2.61	3.05	2.95
50-100	2.49	2.67	2.49
100-300	2.05	2.11	2.11
300 million-1 billion	2.23	2.68	2.08
> 1 billion	1.81	2.19	2.62

SOURCE: Federal Deposit Insurance Corporation, "Consolidated Reports of Condition and Income for Insured Commercial Banks," 1984-86.

total loans was lower at year-end 1986 than one year earlier for all size categories in the District except for banks in the \$100 million-\$1 billion asset range. Small banks, those with assets less than \$25 million, showed a large decline during this period, with the charge-off ratio falling from 1.51 percent to 1.24 percent. For the largest banks in the Eighth District, the charge-off ratio fell only slightly. Chart 1 compares loss rates of different loan types. As one can see from the chart, the loss rate was highest for District banks' agricultural loans, with commercial loans a close second.

As table 5 shows, the nonperforming loan rate decreased in the District during 1986, falling from 2.50 percent in 1985 to 2.16 percent in 1986. This pattern was mirrored across all size categories of District banks.

Because of deteriorating asset quality during the past several years, banks in the Eighth District and the nation have increased their allowance for loan losses as a share of their total loans outstanding. This action has been taken as a precautionary measure to absorb expected future loan losses. Table 6 indicates that medium-size banks, in particular, increased their loan loss allowance account in response to an acceleration in their level of nonperforming loans. As a percent of total loans, Eighth District banks' loan loss allowance increased from 1.31 percent at year-end 1985 to 1.39 percent in 1986, while nationally this ratio rose from 1.42 percent to 1.62 percent.

Chart 1
Loan Loss Ratios by Category
Eighth District

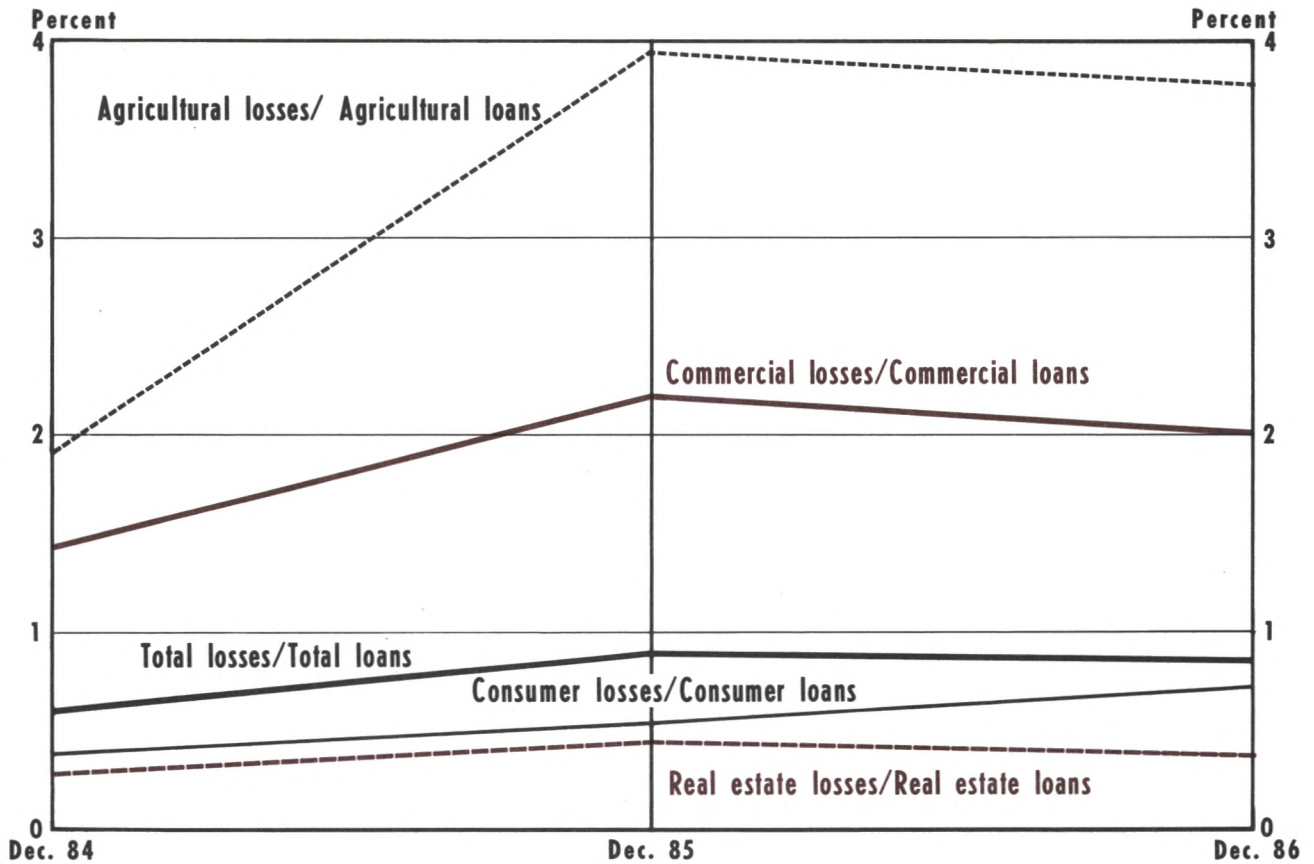


Table 6

Allowance for Loan Losses as a Percent of Total Loans

	12/1986	12/1985	12/1984
United States	1.62%	1.42%	1.24%
Eighth District	1.39	1.31	1.20
< 25 million in assets	1.56	1.59	1.41
25-50	1.42	1.26	1.17
50-100	1.39	1.22	1.09
100-300	1.30	1.19	1.07
300 million-1 billion	1.39	1.35	1.09
> 1 billion	1.40	1.41	1.39

SOURCE: Federal Deposit Insurance Corporation, "Consolidated Reports of Condition and Income for Insured Commercial Banks," 1984-86.

CAPITAL ADEQUACY

Capital — the difference between a bank's assets and its liabilities — supports a bank's operations and provides a cushion for losses that may arise. Bank capital traditionally has been seen as a way to protect a bank and its creditors from failure. For a given quality of assets, the lower the capital base, the greater the risk of insolvency. The level of capital also serves to maintain public confidence in the soundness of individual banks and the banking system as a whole.

The amount of capital by itself does not necessarily provide useful information to regulators; capital must be measured relative to those balance sheet items whose fluctuations bank capital is intended to cushion. Regulators generally are concerned with the amount of primary and total capital relative to some

measure of the bank's asset base.⁵ The regulatory agencies do not assume that a bank's capital is adequate simply because it meets the minimum capital requirements. Banking organizations whose operations involve higher than normal degrees of risk are expected to hold additional capital. Areas that merit particular attention in analyzing risk are the loan and investment portfolios, the level of liquid assets in relation to total assets, the volume and nature of off-balance sheet risk exposure, the level and character of intangible assets and the extent and nature of all nonbanking activities.⁶ Federal banking regulators will require specific banks to meet higher capital ratios if their assets are considered to be risky, that is, to have a relatively high probability of significant decline in value.⁷

Improvement in bank capital ratios in recent years is apparent throughout the range of institutions. One major reason for the increased levels of capital has been the adoption of capital adequacy guidelines by the three federal agencies that regulate U.S. commercial banks: the Federal Deposit Insurance Corporation, the Federal Reserve System and the Office of the Comptroller of the Currency.⁸ In November 1983, Congress enacted the International Lending Supervision Act of 1983, which directed the federal banking agencies to establish minimum levels of capital for banks. As a result, these agencies have set minimum standards of 5.5 percent primary capital to assets and 6.0

⁵The components of primary capital as reported in the FDIC Consolidated Report of Condition and Income are: common stock, perpetual preferred stock, surplus, undivided profits, contingency and other capital reserve, qualifying mandatory convertible instruments, allowance for loan and lease losses, and minority interests in consolidated subsidiaries, less intangible assets excluding purchased mortgage servicing rights. (For the purposes of this paper, only the goodwill portion of intangible assets was deducted.) Secondary capital is limited to 50 percent of primary capital and includes subordinated notes and debentures, limited-life preferred stock and that portion of mandatory convertible securities not included in primary capital. Each bank's secondary capital is added to its primary capital to obtain the total capital level for regulatory purposes.

⁶Off-balance sheet activities are discussed most often in terms of loan commitments, standby and commercial letters of credit, foreign exchange contracts, financial futures and forward contracts and interest rate or foreign currency swaps. These transactions all involve contracts for the future purchase or sale of assets and include relatively new activities for banks.

⁷The Federal Reserve Board has developed a proposal for the adoption of risk-based capital standards. The proposed guideline would assign weights based on relative risk to assets and certain off-balance sheet items. The sum of these weighted asset values is the weighted risk asset total against which actual primary capital would be compared.

⁸See Gilbert, Stone and Trebing (1985).

Table 7
Total Capital Ratios

	12/1986	12/1985	12/1984
United States	8.18%	8.01%	7.52%
Eighth District	8.56	8.47	8.31
< 25 million in assets	10.07	9.90	9.83
25-50	9.29	9.25	9.19
50-100	9.16	9.00	8.80
100-300	8.62	8.50	8.52
300 million-1 billion	8.43	8.54	8.08
> 1 billion	7.62	7.21	6.72

SOURCE: Federal Deposit Insurance Corporation, "Consolidated Reports of Condition and Income for Insured Commercial Banks," 1984-86.

percent total capital to assets. The minimum capital ratios are the same for all federally supervised banking organizations regardless of size, type of charter or membership in the Federal Reserve System.

As indicated in table 7, total capital ratios are well above the minimum standards established by the bank regulatory agencies both for banks in the Eighth District and the banking industry as a whole. The average total capital ratio (the sum of the individual banks' total capital divided by the sum of the individual banks' total adjusted assets) was 8.56 percent for Eighth District banks compared with 8.18 percent for all U.S. commercial banks. In 1986, total capital ratios rose across all asset size ranges except those District banks in the \$300 million to \$1 billion range. For banks with assets greater than \$1 billion, the average total capital ratio rose from 7.21 percent in 1985 to 7.62 percent in 1986. As of December 1986, approximately 1.6 percent of all District banks did not meet the minimum regulatory total capital standards, while for the nation, slightly more than 3.8 percent of the commercial banks had deficient total capital ratios.

SUMMARY

Overall, District commercial banks showed improved profitability in 1986, outperforming their peers across the nation. District banks, in general, earned higher returns on assets and equity than in the previous two years. Net interest margins also improved at banks in the region.

Asset quality continues to be a major factor influencing the banking industry's level of earnings.

While the ratios of loan charge-offs and nonperforming loans to total loans declined in the District, banks did, however, increase their allowance for loan losses in order to absorb additional loan losses in the future.

A majority of Eighth District banks improved their capital ratios during 1986 and are positioned well above the minimum standards established by bank regulators. On the whole, District banks outperformed the nation in terms of their capital adequacy position.

REFERENCES

- Barry, Lynn M. "1985 — Eighth District Bank Performance," *Banking and Finance — An Eighth District Perspective* (Spring 1986).
- Board of Governors of the Federal Reserve System. Press Release, *Capital Adequacy Guidelines*, April 18, 1985.
- Carraro, Kenneth C. "Uneven Trends in Eighth District Bank Profitability," *Banking and Finance — An Eighth District Perspective* (Spring 1985).
- _____. "Bank Failures in the 1980s — Another Perspective," *Banking and Finance — An Eighth District Perspective* (Winter 1986/1987).
- Gilbert, R. Alton, Courtenay C. Stone, and Michael E. Trebing. "The New Bank Capital Adequacy Standards," this *Review* (May 1985).
- Waldrop, Ross. "Commercial Bank Performance in 1985," *Banking and Economic Review*, Federal Deposit Insurance Corporation, Vol. 4, No. 3, April 1986, pp. 19–24.
- _____. "Commercial Banking Performance, Mid-Year 1986," *Banking and Economic Review*, Federal Deposit Insurance Corporation, Vol. 4, No. 8, November/December 1986, pp. 13–19.

A Review of the Eighth District's Business Economy in 1986

Thomas B. Mandelbaum

FOR the second successive year, economic growth was generally moderate for both the nation and the Eighth District. Against this background of moderate growth, however, expansion in some regions and sectors was quite vigorous. This article describes the District's economic growth in 1986 in the context of the current recovery period. In addition, some recent projections of regional economic growth are discussed.

CONSUMER INCOME AND SPENDING

District nonfarm income growth, adjusted for inflation, has followed national trends throughout the current recovery period; it accelerated in 1984, but has grown more slowly in recent years (chart 1). Real income has grown more slowly in the District than nationally each year of the recovery.

Real District nonfarm personal income grew by 3 percent in 1986, somewhat slower than the nation's 3.4 percent expansion.¹ Each of the major components of personal income — earnings, transfer payments, and dividends, interest and rent — grew more slowly regionally than nationally.

District retail sales, after growing close to the na-

tional pace in the first three years of the recovery period, were considerably more sluggish in 1986: they grew by only 0.5 percent, after adjusting for inflation, compared with 2.4 percent growth in national retail sales. Consistent with national trends, sharp increases in District car sales in September and December boosted retail sales in the second half of the year. District retailers generally reported moderate gains in Christmas sales over last year. Changes in the federal tax code, which eliminated the deductibility of sales taxes after year's end, contributed to vigorous sales of autos and consumer durables in December.

LABOR MARKETS

District employment growth has followed a similar pattern to that for the nation during the recovery period (chart 2). As with personal income, the most rapid growth occurred in 1984; since then, both District and national employment have grown only moderately. District nonfarm employment grew by 2.3 percent in 1986, slightly less than the nation's 2.6 percent growth.

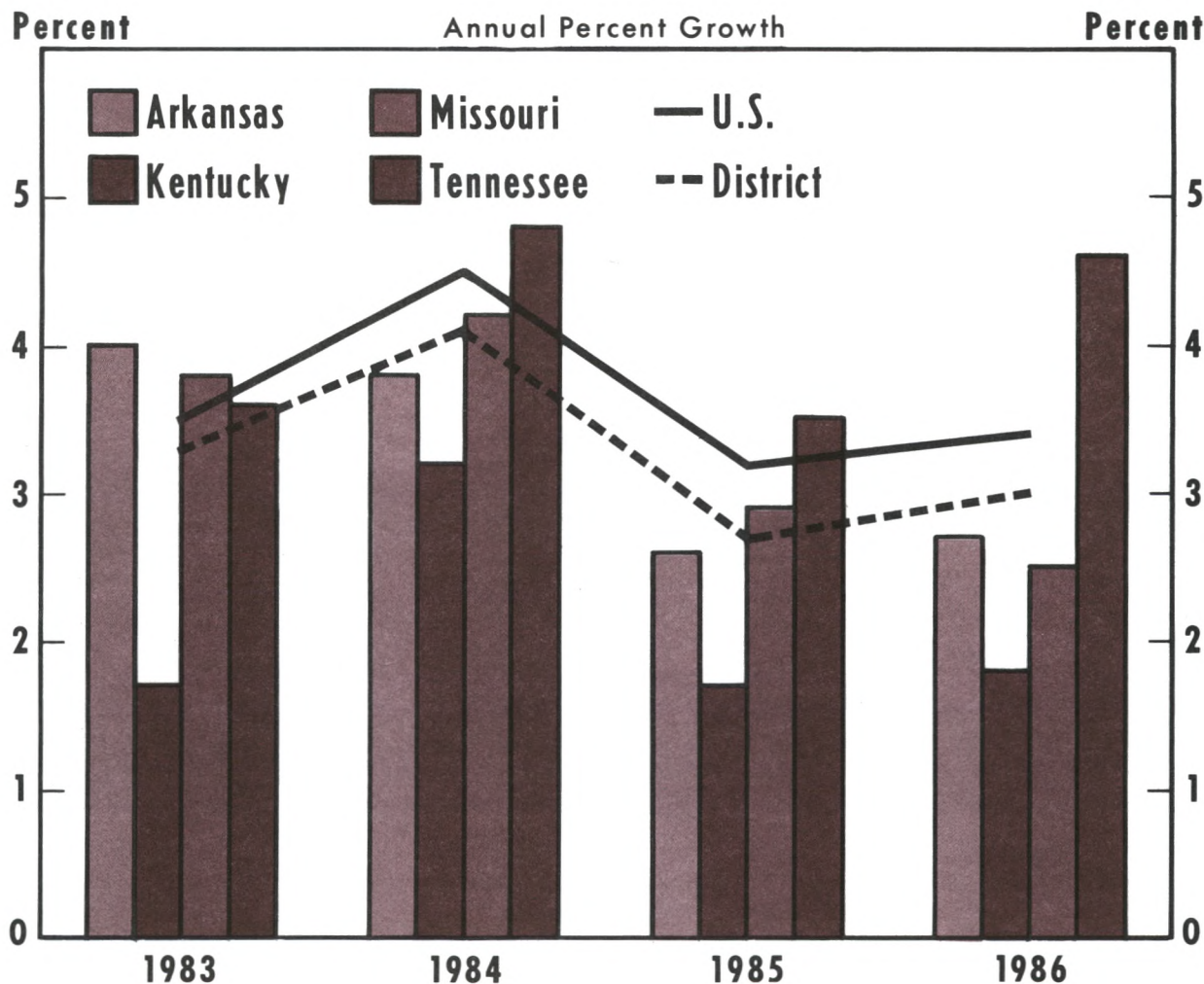
After falling rapidly in 1983, the District unemployment rate has declined more slowly each subsequent year of the recovery, following the national pattern. In 1986, the 1.8 percent growth of the District's total civilian employment was only slightly greater than the growth of the labor force, but sufficient to allow the District unemployment rate to drop slightly to 7.8 percent. In general, unemployment is higher in the

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¹Annual growth rates in this article compare data for the entire year with the previous year.

Chart 1

Growth of Real Nonfarm Personal Income



District's nonmetropolitan areas, as a result of weakness in agriculture- and energy-related businesses.

SECTORAL DIFFERENCES

Throughout the recovery, District employment growth has been divided unevenly among sectors. Mining employment has fallen sharply, while the manufacturing, government and transportation/communications/public utilities sectors have grown sluggishly; trades, finance and services have grown moderately, while construction has expanded more sharply. Except for the mining sector, in which em-

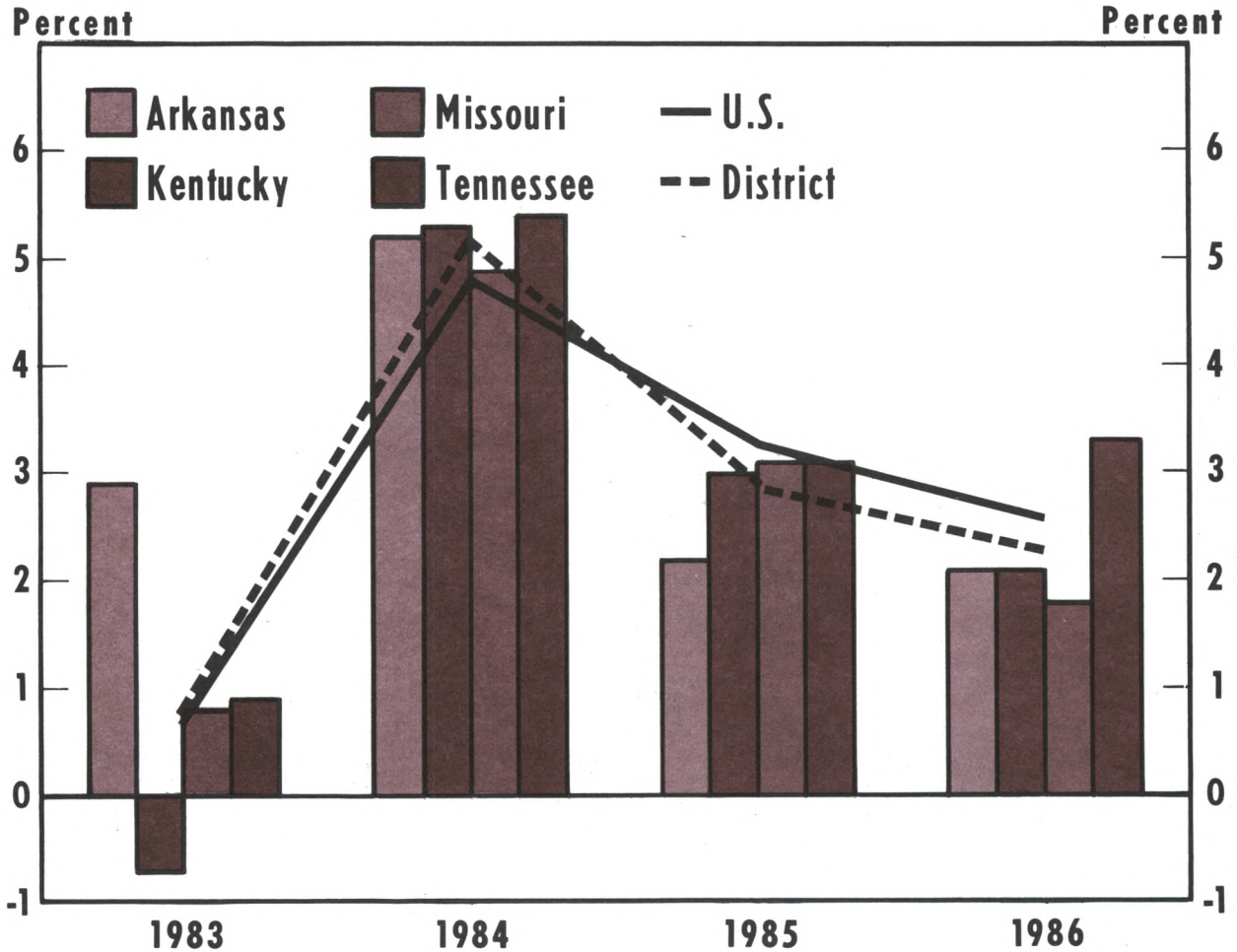
ployment dropped considerably less than nationally, each of the District's sectors grew about as rapidly as its national counterpart.

Goods-Producing Sectors

Mining. The plunge in oil prices in the first half of 1986 had an adverse effect on some District communities dependent on oil extraction. The negative impact on the general regional economy was limited, however: only 1 percent of the District's nonfarm workers are engaged in mining activities and far fewer are employed in oil-extractive operations.

Chart 2

Growth of Nonfarm Employment



District mining employment — heavily concentrated in Kentucky coal production — fell 3.4 percent in 1986 and at a 5.1 percent annual rate since 1982. Employment in the nation's mining industry — more heavily engaged in oil extraction — fell more steeply during both periods. In 1986, 171.9 million tons of coal were mined in the four major District states, up 3.9 percent from its 1985 level and 7.0 percent above 1982. Productivity gains in coal mining allowed more coal to be produced with a declining work force.

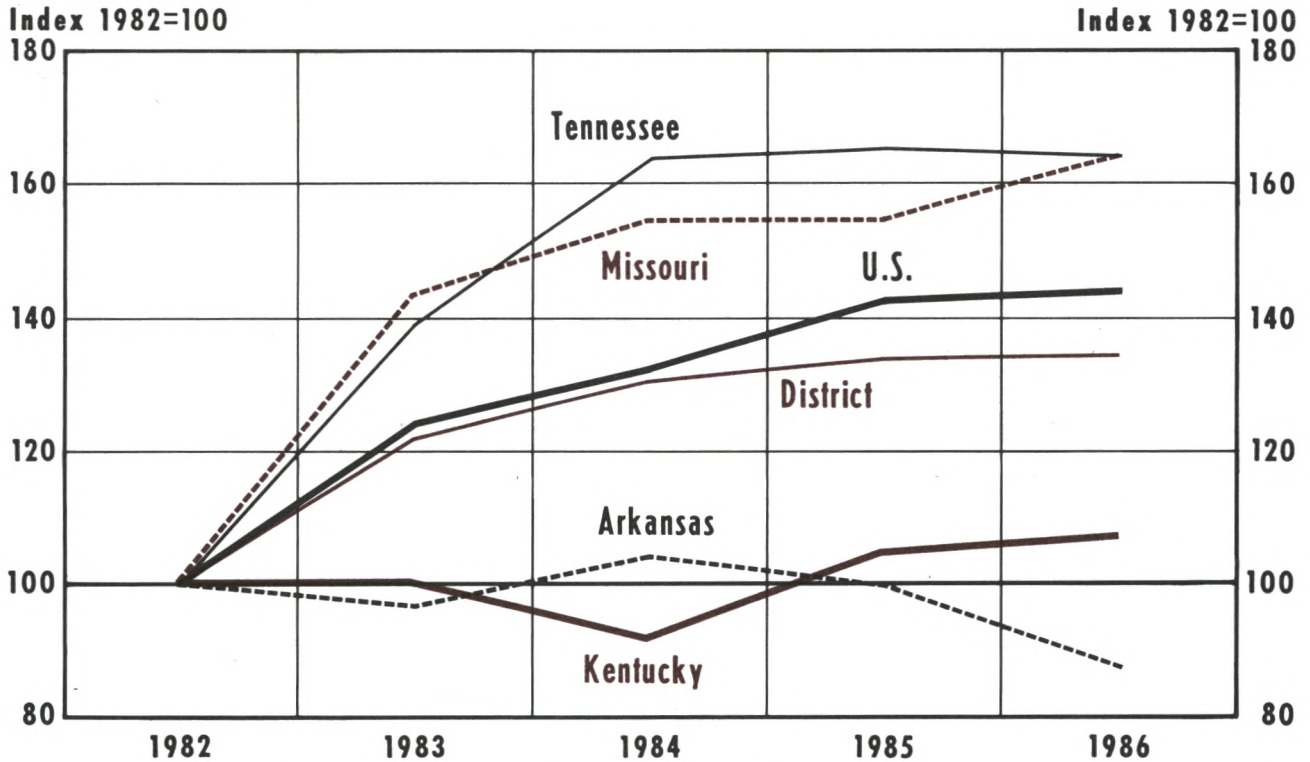
Manufacturing. Many analysts expected the declining exchange value of the dollar since early 1985 to stimulate domestic manufacturing activity in 1986 by making imports more expensive to domestic con-

sumers and exports less expensive in foreign markets. A recent survey of District manufacturers, however, suggests that the shrinking value of the dollar had little effect on either employment or output in 1986. In most cases, market-specific factors were more important than the dollar's decline in influencing growth. One reason for this is that many District producers are competing against, or buying imports from, nations whose currencies have not substantially appreciated against the dollar, such as Taiwan and South Korea.

District manufacturing employment expanded at a 1.2 percent annual rate between 1982 and 1986, exceeding the nation's 0.5 percent pace. Employment in the District's transportation equipment, fabricated

Chart 3

Real Value of Construction Contracts



metals and printing/publishing industries grew fastest over this period, while regional producers of chemicals and textile/apparel reduced their work forces.

District manufacturing employment dropped 0.6 percent in 1986, similar to the national decline in such employment.² Of the District's major industries, only the printing/publishing, food processing and transportation equipment sectors increased their work forces over the year. Employment in the production of textiles and apparel leveled off in 1986 after a sharp drop in 1985.

District defense contractors, primarily manufacturers, benefited from the acceleration of federal defense spending in the first half of the 1980s. The real value of defense contracts received in the District grew at an

8.8 percent annual rate between 1982 and 1985. Recently, however, growth in defense contracts has waned. While the inflation-adjusted value of defense contracts awarded nationally declined slightly in fiscal 1986 from the previous year, District contracts dropped almost 17 percent to \$7.3 billion, in 1982 dollars, because of a sharp decline in Missouri.

Construction. After increasing sharply in 1983, District construction activity has grown more slowly each year of the recovery. Chart 3 shows that the real value of construction contracts awarded in the Eighth District and in the nation followed similar growth paths through 1984. Contracts expanded more slowly in the District than in the nation in 1985 and 1986, however, primarily because of slower District growth of residential construction.

Residential construction, which accounts for about half of the value of regional construction contracts, grew more slowly in the District than in the nation throughout the recovery. Following a large increase in the first year of the recovery, single-family housing permits issued in the District grew moderately

²The decline in manufacturing employment does not necessarily imply a decline in manufacturing output, however. Increases in worker productivity have allowed the nation to produce increasing output with fewer workers in recent years. See Tatom (1986) and Ott (1987).

through 1985. In 1986 they jumped 24.8 percent, as mortgage rates declined to their lowest level since the late 1970s. Permits for multi-family dwellings expanded rapidly in 1983 and 1984 but have subsequently declined.

Due primarily to a stronger upturn in 1983, the expansion of District nonresidential building exceeded the nation's growth in the current recovery period. Between 1982 and 1985, the real value of District nonresidential contracts grew at a 14.4 percent annual rate, exceeding the nation's 11.1 percent pace. The pace of nonresidential building slowed in 1986, however. District nonresidential construction contracts declined 0.2 percent in 1986, compared with a more severe 6.6 percent drop nationally.

Nonbuilding construction (primarily public works and utilities) expanded more slowly in the region than in the nation throughout the recovery period. While the real value of District nonbuilding contracts declined at a 2.9 percent rate between 1982 and 1986, a 2.3 percent increase was posted for the nation as a whole. District nonbuilding contracts fell 6.4 percent in 1986 compared with a slight increase nationally.

Service-Producing Sectors

Three of the service-producing sectors — trades, finance and services — account for more than half of the District's nonfarm work force and were responsible for most of the District's job growth since 1982.

The *services* sector was the second-most rapidly expanding portion of the District economy, growing at a 4.8 percent annual rate between 1982 and 1986, which is only slightly less than its growth nationally. Employment in the District's services sector accelerated slightly in 1986, growing by 5.4 percent. Much of the growth of the regional services sector was concentrated in business and health services, mirroring national trends.

Employment in *retail and wholesale trades* grew at a 4.3 percent annual rate in the recovery period with progressively slower growth since 1984, reflecting the deceleration of District retail sales. Because of particularly swift growth in Tennessee, the sector has expanded faster in the District than nationally during the last four years.

The *finance* sector includes financial, insurance and real estate firms. Nationally, employment in the sector accelerated throughout the recovery, culminating in a 5.9 percent jump in 1986. Employment gains in 1986 were stimulated by extensive homebuilding and mort-

gage refinancing as interest rates dropped. District gains have been considerably weaker than the national average since 1985. In 1986, the sector grew by 3.1 percent regionally, compared with 5.9 percent nationally.

Following moderate gains in 1984, employment growth in both the District's and the nation's *transportation, communication and utilities* sector has been sluggish. Deregulation and consolidations of communications and transportation firms curbed the growth of this sector. Although it did not result in substantial employment gains, barge traffic on the Mississippi River was up in 1986, the first increase since 1983. The weight of shipments passing through the locks at Alton, Illinois, increased 7.6 percent last year due to larger shipments of grain, coal, chemicals and petroleum.

Government sector employment grew little during the expansion period, both regionally and nationally. In recent years, however, government spending contributed heavily to the growth of the District economy. Despite a drop in Department of Defense contracts, federal government expenditures in District states grew to \$56.5 billion in fiscal year 1986, a gain of 3.7 percent from a year earlier, after adjusting for inflation.

INTERSTATE COMPARISONS

Economic growth varied somewhat among the District's states. This section highlights differences among these economies. For similar comparisons among the District's major metropolitan areas, see pages 28 and 29.

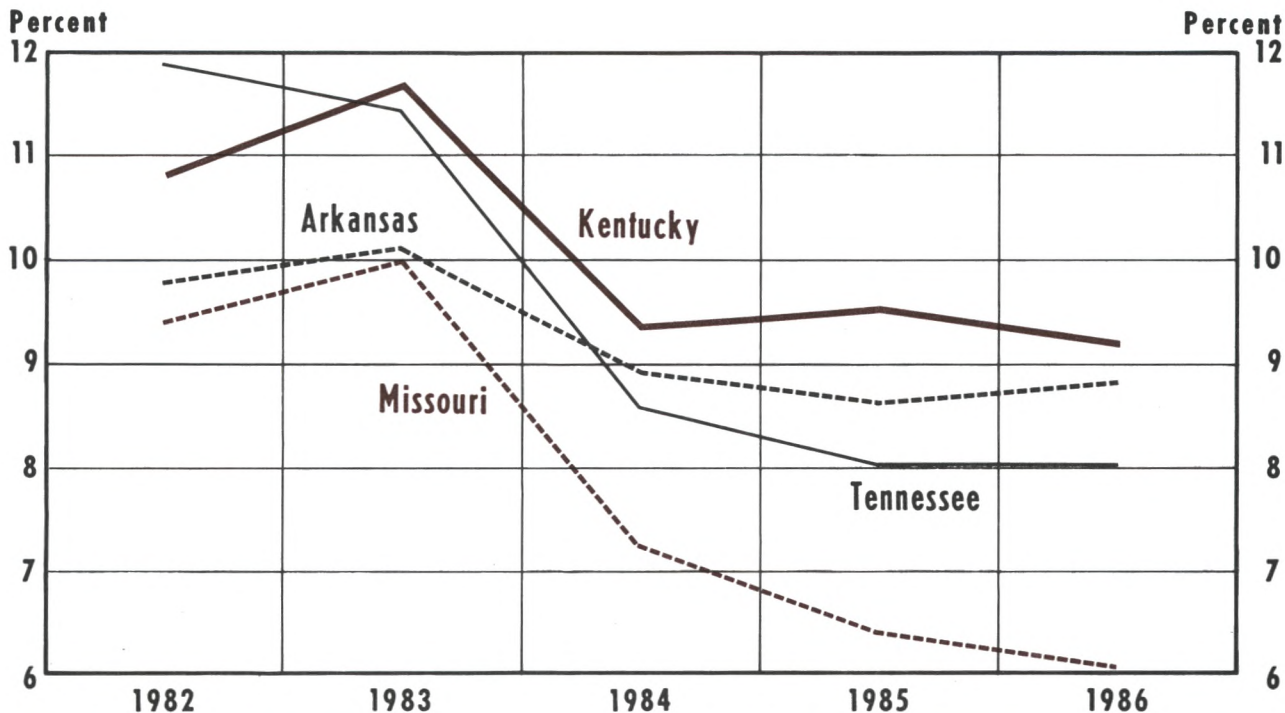
Arkansas

Arkansas' nonfarm income and employment growth was moderately strong in 1983 and 1984, but weakened considerably in succeeding years (charts 1 and 2). As employment growth slowed, the state's unemployment rate dropped only slightly from its 1984 level (chart 4).

In 1986, real nonfarm personal income grew 2.7 percent in Arkansas, slightly slower than the District and national averages. A drop in real income from dividends, interest and rent contributed to the sluggishness in Arkansas. Arkansas' nonfarm employment expanded by 2.1 percent in 1986. Employment in construction and most service-producing sectors grew slower than the District's average pace, while manufacturing grew more rapidly.

Chart 4

Unemployment Rates in Eighth District States



Of the four District states, Arkansas is most dependent on manufacturing as a source of jobs; manufacturing employment accounts for more than a quarter of the state's 1986 nonfarm work force. Manufacturing employment grew 1.2 percent in 1986 and at a 2.1 percent rate over the recovery period, the most rapid manufacturing growth of the District states. Employment in the state's relatively large food processing industry grew by 8.3 percent last year and has accounted for much of the growth in Arkansas manufacturing since 1982. Most of this growth was at poultry processors, who have benefited from the shift away from red meat consumption in favor of poultry in recent years.

Industries related to forest products also are quite important to Arkansas' industrial base. Employment at furniture and paper product firms increased last year, while employment in lumber and wood products declined. Historically, much of the lumber and wood products were purchased by the oil-patch states, where economies are currently weak. Sluggish construction activity within Arkansas also hindered the expansion of the lumber industry.

Construction activity in Arkansas has been weaker than in other District states (chart 3) and the nation. The real value of construction contracts declined 12.1 percent in 1986 and at a 3.2 percent annual rate between 1982 and 1986. While nonresidential building grew at near the national pace throughout the recovery, the expansion of contracts for nonbuilding projects and for residential construction trailed the national average. Multi-family residential growth was particularly slow.

Kentucky

Kentucky rebounded from the last recession more slowly than the other District states. This can be seen clearly in charts 1, 2 and 4. Kentucky's real nonfarm income was weak in 1983, while nonfarm employment declined and the unemployment rate rose. In subsequent years, employment in Kentucky grew at near the District's average pace, but the unemployment rate remained relatively high and real income growth was weak.

Much of the state's sluggish growth can be traced to

Major Metropolitan Areas in the Eighth District

Much of the District's economic activity is concentrated in four metropolitan areas: Little Rock, Louisville, Memphis and St. Louis, which account for about a third of the District's nonfarm work force and personal income. This section compares the recent growth of employment and construction in these four metropolitan areas.

Little Rock

After three years of moderate growth, nonfarm employment growth in Little Rock dropped sharply in 1986 to 1.3 percent (chart 1A).¹ The primary source of Little Rock's employment growth — construction and service-producing sectors — during the recovery matched those of the District's other major metropolitan areas. Little Rock's largest employment gains in 1986 were in business and health services and retail trade; the sharpest declines occurred in the manufacture of durable goods, particularly electronic equipment. The slow job growth in 1986 caused the Little Rock unemployment rate to rise to 6.9 percent from 6.4 percent in 1985.

As chart 2A shows, construction activity has been sluggish throughout the recovery in Little Rock, trailing the other metropolitan areas.² 1986 was no exception, as a slight gain in the real value of nonresidential building contracts was counterbalanced by losses in the residential sector.

Louisville

Louisville has enjoyed a moderately strong, steady expansion throughout the recovery, with

¹Employment data for 1982 do not include Jersey County, Illinois, as part of the St. Louis metropolitan area. In addition, Shelby County, Kentucky, and Harrison County, Indiana, are not included as part of the Louisville metropolitan area in the 1982 data. These exclusions cause the 1983 growth rates for these two metropolitan areas to be higher than if consistent definitions had been used.

²The construction contract data for all years are based on the 1982 definitions of the metropolitan areas. They therefore exclude several counties added to the metropolitan areas in 1983: the Little Rock area excludes Faulkner and Lonke counties in Arkansas; Louisville excludes Harrison County, Indiana, and Shelby County, Kentucky; St. Louis excludes Jersey County, Illinois.

losses in manufacturing more than offset by gains in service-producing sectors, particularly finance, insurance and real estate and trade. Unemployment has declined from 11.7 percent in 1982 to 7.0 percent in 1986. Construction activity has been moderate in recent years, growing at near the average of the four metropolitan areas (see chart 2A). In 1986, however, construction activity declined as vigorous homebuilding was offset by declines in the nonresidential sector.

Memphis

Among the four metropolitan areas, Memphis has had the fastest growing nonfarm work force since 1984. In 1986, employment grew by 3.9 percent with strong gains in most service-producing sectors. Business and health services grew particularly rapidly. Memphis' unemployment rate edged up slightly to 6.8 percent in 1986 as the area's labor force grew even more rapidly than employment.

Moderate growth in the nonresidential sector and an extremely strong residential expansion allowed Memphis to post the most rapid construction growth of the four metropolitan areas in the 1982-86 period. In 1986, construction growth was brisk, with a moderate expansion in the construction of nonresidential and single-family homes and a decline in multi-family residential building.

St. Louis

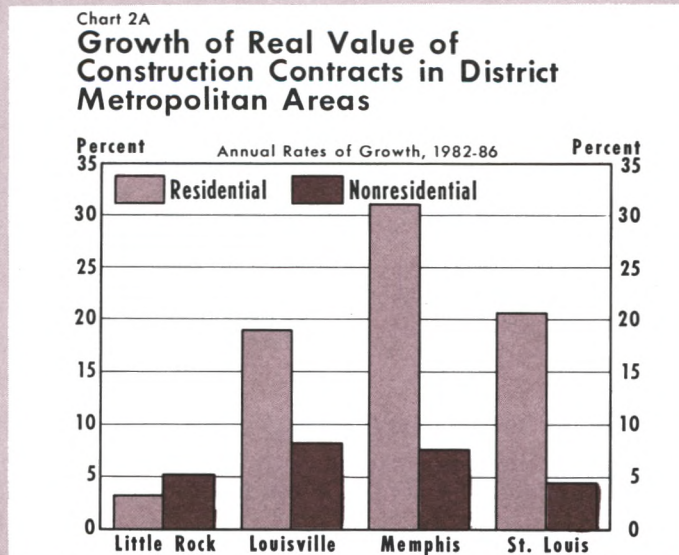
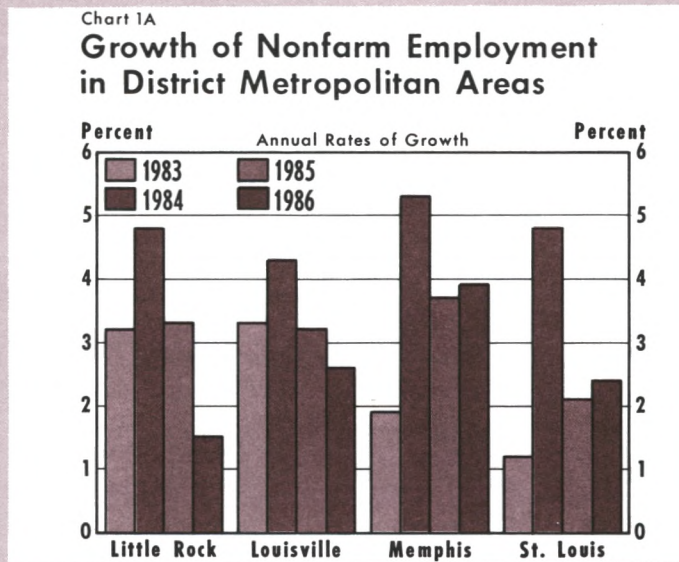
Employment in St. Louis, the largest and most diversified economy in the District, has grown more slowly than the average of the four metropolitan areas most years of the current recovery (chart 1A). An even slower expansion of the area's labor force, however, allowed the unemployment rate in St. Louis to gradually decline to 7.0 percent in 1986 from its 10.7 percent peak in 1983. Manufacturing employment in the St. Louis area grew slightly between 1982 and 1986, largely because of gains in the production of motor vehicles.³ Employment in

³In order to maintain a consistent definition of manufacturing, Missouri Division of Employment data were adjusted for changes in industrial categories.

traditional industries like textile and apparel production, metals fabrication and shoe production continued to decline throughout the period. In 1986, manufacturing employment dropped slightly, with declines concentrated in the production of primary metals and chemicals.

Residential construction in the St. Louis area, which has grown rapidly since 1982 (chart 2A), grew particularly sharply in 1986. The real value of residential construction contracts grew 32.1 percent in

1986, twice the average of the four metropolitan areas. Nonresidential building grew more slowly. The real value of nonresidential construction contracts increased more slowly in St. Louis than in the other metropolitan areas since 1986. The value of nonresidential contracts was flat in 1986, following strong growth in 1985. Reflecting this growth, a large volume of office space was completed in 1986, resulting in a sharp rise in office vacancy rates in the St. Louis area.



Kentucky's three largest sectors: trades, services and manufacturing. Each has grown more slowly than in other District states since 1982. Manufacturing employment fell 1 percent in 1986, with losses concentrated in production of durable goods, including primary metals, nonelectrical machinery and transportation equipment.

One bright spot in the state economy was the strong job expansion in the financial industries. Between 1982 and 1986, employment in this sector grew at a 4.2 percent rate, leading the District states.

Construction employment in Kentucky also expanded moderately since 1984. The real value of construction contracts expanded slowly, however, increasing 2.6 percent in 1986 and at a 1.9 percent rate since 1982 (chart 3). Although nonresidential construction expanded slightly faster than the regional and national averages, residential and nonbuilding construction was substantially weaker in the state.

Missouri

Missouri's general economic growth matched the District's average in the first three years of the recovery period, with stronger construction activity offset by weakness in manufacturing. In 1986, a slowdown in most sectors of the economy resulted in slower growth of real income and nonfarm employment. Due, in part, to slow labor force growth, however, employment grew rapidly enough to allow the state's unemployment rate to drop steadily from 9.9 percent in 1983 to 6.1 percent in 1986 (chart 4).

Most of the District's 1986 decline in manufacturing jobs was concentrated in Missouri, where manufacturing employment fell 1.9 percent. The largest declines occurred in Missouri's fabricated metal and electrical and nonelectrical machinery industries.

The transportation equipment industry, which is particularly important to the state economy, was a source of strong growth in the first two years of the recovery; it has declined slightly in the last two years. In 1986, employment increases in aircraft manufacturing — spurred by defense spending — were offset by job losses in motor vehicle production. The decline in auto employment was produced by temporary layoffs for plant modifications and inventory reductions after slower-than-expected sales late in the year. Layoffs of auto assembly workers early in 1987 and the scheduled closing of an aging truck assembly plant in St. Louis by mid-1987 are likely to produce little job

growth in this sector in 1987.

Defense contracts awarded in Missouri — recipient of two-thirds of the District's total — fell 27.8 percent in fiscal 1986, after adjusting for inflation. The \$5.5 billion in contracts were primarily for the production of aircraft in the St. Louis area. Despite the recent decline, the backlog of uncompleted contracts and federal defense expenditures not yet spent imply continued high levels of defense activity for 1987.

Construction activity in Missouri has been strong since the trough of the last recession (chart 3). The real value of construction contracts grew at a 13.3 percent annual rate between 1982 and 1986. Following little growth in 1985, construction grew sharply last year in Missouri, led by gains in single-family home construction. In contrast to falling growth in the nation as a whole, nonresidential construction and multi-family residential construction in Missouri also grew vigorously in 1986.

Tennessee

Tennessee's economic growth has exceeded that of the District throughout the recovery. Tennessee's unemployment rate has fallen from 11.9 percent, highest in the District, in 1982, to 8.0 percent by 1986, second-lowest of the District states. As chart 1 shows, the state's real nonfarm income growth was particularly strong in 1986, reflecting its employment expansion (chart 2). Nonfarm employment grew by 3.3 percent in 1986, making Tennessee the District's fastest-growing state. The trades and services sectors, accounting for almost half of nonfarm employment, have been responsible for much of the job gains in recent years.

Employment growth in the state's manufacturing sector has mirrored the District average each year since 1983. Manufacturing employment dropped slightly in 1986; gains in food processing, fabricated metals, printing/publishing and transportation equipment were offset by losses in most other industrial sectors. Employment in the state's largest manufacturing industry, textile and apparel production, increased steadily the second half of 1986, but at year-end remained below the level of a year earlier.

Following sharp growth in 1983 and 1984, construction activity in Tennessee leveled off at relatively high levels in 1985 and 1986. Both residential and nonresidential construction growth have been weak in the past two years. In the residential sector, strong gains in single-family homebuilding were nullified by losses in the construction of multi-family units.

OUTLOOK FOR 1987

Projections from academic and government institutions in District states suggest that this year's economic growth will be similar to last year's. Table 1 presents the actual growth rates for 1986 and projections for 1987 for several economic indicators. For comparison, projections of national growth made by Wharton Econometrics are provided.

The growth of total personal income in the nation is expected to slow in 1987; in contrast, it is expected to accelerate in the District states. To some extent, the projected acceleration of District personal income growth simply reflects higher expected inflation. Kentucky's estimated income growth, however, represents a substantial increase over last year's growth.

In Arkansas and Kentucky, nonfarm payroll employment should grow more rapidly in 1987; in Missouri and Tennessee, the growth of nonfarm payroll employment is expected to slow. Projections of increased growth in the manufacturing sector are based partly on the anticipated effects of the dollar's declining exchange value since early 1985.

The most rapid deceleration of payroll employment is anticipated in Tennessee, where employment is projected to grow by 1.7 percent in 1987, following its 3.3 percent growth last year. Employment growth in the Tennessee wholesale/retail trades sector is expected to slow as consumer spending slows. Construction employment is also expected to expand more slowly next year in response to the Tax Reform Act of 1986.

Employment growth in Arkansas, Missouri and Tennessee should be sufficient to allow a slight drop in unemployment rates. Unemployment projections for Kentucky are not available.

CONCLUSION

The District's economic growth has been similar to the nation's in 1986 and throughout the current recovery period, with sharp 1984 gains followed by two years of moderate growth. Income and employment growth generally has been strongest in Tennessee among the District states, while the expansion of construction activity has been concentrated in Missouri and Tennessee. Projections of economic growth in District states suggest that the expansion will continue, making 1987 the fifth successive year of growth for the District economy.

Table 1
Projected Growth in Eighth District States

	1986	1987
Unemployment rate		
United States	7.0%	6.7%
Arkansas	8.8	8.4
Kentucky	9.2	N/A
Missouri	6.1	5.6
Tennessee	8.0	7.9
	Percent change¹	
	1986	1987
Payroll employment		
United States	2.6%	2.6%
Arkansas	2.1	2.5
Kentucky ¹	2.3	3.4
Missouri	1.8	1.2
Tennessee	3.3	1.7
Manufacturing employment		
United States	-0.7%	N/A
Arkansas	1.2	2.3%
Kentucky	-0.4	N/A
Missouri	-1.9	0.2
Tennessee	-0.1	0.4
Personal income (current dollars)		
United States	5.3%	5.0%
Arkansas	3.4	6.3
Kentucky	2.2	6.8
Missouri	3.9	5.8
Tennessee	6.1	6.3

¹Percent changes compare entire year with previous year, except for Kentucky figures which reflect fourth quarter to fourth quarter growth.

SOURCES: United States: Wharton *Quarterly Model Outlook*, March 1987; Arkansas: University of Arkansas at Little Rock, *Arkansas Economic Outlook*, January 1987; Kentucky: Kentucky Revenue Cabinet; Missouri: College of Business and Public Administration, University of Missouri-Columbia, *Missouri Economic Indicators*; 4th Quarter, 1986; Tennessee: Center for Business and Economic Research, the University of Tennessee, Knoxville, *On the State Economic Outlook*.

REFERENCES

- Ott, Mack. "The Increasing Share of Services in U.S. Output — A Long-Run View," this *Review*, forthcoming, 1987.
- Tatom, John A. "Why Has Manufacturing Employment Declined?" this *Review* (December 1986), pp. 15-25.